

# Examining Ethical Typologies of Agriculture and Natural Resources Leaders: A Q Study

Michelle R. Giles<sup>1</sup>, Taylor Nash<sup>2</sup>, Laura L. Greenhaw<sup>3</sup>, Shelli D. Rampold<sup>4</sup>, and J. Clay Hurdle<sup>5</sup>

## Abstract

*This study sought to describe agriculture and natural resources (ANR) opinion leaders' ethical orientations by illuminating how they determine what is right/wrong or good/bad when making decisions that impact the ANR industry. ANR leaders' ethical perspectives impact decisions regarding complex critical issues and influence others' behavior. We used Q methodology, and four typologies were revealed, including Principled, Industry-focused, Dutiful, and Multi-Hat Leaders. The methodological approach of Q methodology to identify common ethical perspectives among ANR leaders is unique. Leadership development practitioners and educators should encourage leaders to reflect on and be cognizant of their ethical beliefs, particularly when making high-stakes decisions with far-reaching implications and when representing others as industry leaders. Though each typology characterized was unique, they all relied on a combination of ethical perspectives to guide their decision making. This may be evidence of Kohlberg's postconventional morality as leaders' attempt to reconcile a multitude of perspectives while seeking solutions to complex problems. Ensuring ethical approaches to food and fiber production and consumption simultaneously with care for and preservation of natural resources begins with a clear understanding of leaders' existing ethical perspectives.*

**Keywords:** Ethics; ethical leadership; agricultural leadership; ethical decision making; morals; values

**Author Note:** Laura L. Greenhaw  <https://orcid.org/0000-0002-1562-9798>  
Shelli Rampold  <https://orcid.org/0000-0003-4815-7157>  
J. Clay Hurdle  <https://orcid.org/0000-0002-2312-2671>

The authors have no conflicts of interest to report.

Please direct correspondence to Laura Greenhaw, PO Box 110540, Gainesville, FL, 32611. Email: [laura.greenhaw@ufl.edu](mailto:laura.greenhaw@ufl.edu)

---

<sup>1</sup>Michelle R. Giles completed a master's degree in political science with a concentration in environmental policy at the University of Florida, [michellegiles117@gmail.com](mailto:michellegiles117@gmail.com).

<sup>2</sup>Taylor Nash is a learning specialist at Farm Credit of Florida, 123000 US-441N, Gainesville, FL, 32653, [taylorasnash@gmail.com](mailto:taylorasnash@gmail.com).

<sup>3</sup>Laura L. Greenhaw is an Assistant Professor of Agricultural Leadership in the Department of Agricultural Education and Communication at the University of Florida, PO Box 110540, Gainesville, FL, 32611, [laura.greenhaw@ufl.edu](mailto:laura.greenhaw@ufl.edu).

<sup>4</sup>Shelli Rampold is an Assistant Professor in the Department of Agricultural Leadership, Education and Communication at the University of Tennessee, 2621 Morgan Circle, Knoxville, TN, 37996, [srampold@tennessee.edu](mailto:srampold@tennessee.edu).

<sup>5</sup>J. Clay Hurdle is a doctoral candidate in the Department of Agricultural Education and Communication at the University of Florida, PO Box 110540, Gainesville, FL, 32611, [jchurdle@ufl.edu](mailto:jchurdle@ufl.edu).

## Introduction

Over 25 years ago, Murphy and Townsend (1994) espoused the importance of ethical leadership in agriculture and called for agricultural education to recognize the connection between leadership and ethical responsibility. They warned of negative trends in agriculture, including increased soil erosion, persistent irrigation from decreasing water tables, increasing use of pesticides and fertilizer, among others and suggested that addressing these complex, interrelated issues required capable agricultural leaders who acknowledge their ethical responsibilities (Murphy & Townsend, 1994). Unfortunately, their study indicated that student leaders in a College of Agriculture were not as ethical as they perceived themselves to be. Moreover, despite not making ethical decisions, the students believed themselves to be successful leaders, signifying a problematic disconnect between their idea of successful leadership and the ethical characteristics of honesty, integrity, and moral character. Murphy and Townsend concluded with a call for increased formal ethical leadership instruction in agricultural education (1994). In 2008, Shinn, Briers, and Baker reconfirmed the importance of ethics in agricultural education. They sought to build consensus among experts regarding a definition of agricultural education that would guide the profession by specifying what doctoral graduates should know and be capable of doing. In addition, they identified a knowledge base of 10 domains, one of which was “history, philosophy, and ethics” (p. 125), noting that graduates should have a deep understanding of “professionalism, intellectual honesty, and professional ethics specific to academia, to industry, and to public education” (p. 127). More recently, Cletzer et al. (2022), undertook a national review of undergraduate agricultural leadership courses. Their findings revealed that ethics is one of the most common concepts included in agricultural leadership coursework, appearing in 21% of the syllabi analyzed. Moreover, among the agricultural leadership courses offered nationwide, four were specifically identified as ethics courses (Cletzer et al., 2022). Despite experts including ethics in the essential knowledge base for agricultural education doctoral graduates (Shinn, Briers, & Bakers, 2008) and ethics being commonly included in undergraduate agricultural leadership course syllabi (Cletzer et al., 2022), we found no studies besides that of Murphy and Townsend’s (1994) nearly 30 years ago, that investigated ethics of agricultural leaders.

Murphy and Townsend (1994) conveyed the importance of establishing a common definition of ethics in order to relate ethics, leadership, and agriculture. The term ethics originates from the Greek word *ethos* and refers to “the values and morals an individual or a society finds desirable or appropriate” (Northouse 2013, p. 330). Merriam-Webster (n.d.) defines ethics as “the principles of conduct governing an individual or group.” Ethics have surrounded food as long as the difference between right and wrong has been debated (Zwart, 2000). Policies and programs like the Endangered Species Act, U.S. Department of Agriculture farm programs, and Clean Air and Water Acts have provided ethical guidance to agriculturists fulfilling their responsibility to provide food and fiber (Turner et al., 2014). These policies and programs are interconnected on ecological, economical, and social characteristics that define how agriculturists should ethically interact in their roles. However, ethical decision-making regarding agriculture is complex and often involves consideration of human and non-human entities.

The concept of land ethics has been applied to explain humans’ responsibility to consider the greater good of their surrounding physical environment when making decisions (Leopold, [1949] 2014). Callicott (1987) interpreted land ethics as a call to recognize humans are part of a larger ecological community. Shaw (1997) expanded on this by introducing a virtue approach to land ethics, which included three virtues: respect, prudence, and practical judgment. Holly (2006) encouraged the use of virtues in developing environmentally ethical solutions and highlighted the limitations of utilitarian and deontological approaches. Leopold, (1949/2014) also recognized

economic motives as limitations in ethical management of the environment, highlighting the difficulty of seeing equal value in all elements of the environment. Similarly, agricultural and natural resource solutions to ethical dilemmas have faced constraints of individual ethics like spiritual morality (Zwart, 2000), socio-economic responsibility (Eastwood et al., 2017), and environmental sustainability (Holly, 2006).

An example can be seen in evaluations of the morality of genetically modified food products (Pouteau, 2000). Virtues of solidarity, freedom, equity, and sustainability were used to develop a scale of ethical equivalence where genetic modification and non-genetically modified practices were compared based on environmental, socio-economic, and socio-cultural ethical equivalence. Qualitative results of the study indicated multiple views on the one ethical question of genetically modified organisms (Pouteau, 2000). More recent ethical issues include climate (Bell, Swaffield, & Peeters, 2019), animal welfare (Gremmen, Blok, & Bovenkerk, 2019), dietary trends (Tague, 2019), and innovation and technology (Ferynhough et al., 2019). As with genetic modification, multiple ethical views may exist on all complex issues ANR leaders consider.

Considering the complexity surrounding “best” decisions in agriculture, ethics play a fundamental role in leaders’ decision-making by guiding what they believe to be right or wrong, good or bad, and ultimately directing their behavior. Moreover, a leader’s ethical behavior is influenced not only by their personal morals and values, but by those from their environment, such as the organization and society in which they operate (Berry, 2007). More importantly, leaders influence the beliefs, behaviors, and opinions of others both informally and through formal decision-making. Rogers and Cartano (1962) defined opinion leaders as “those individuals from whom others seek advice and information” (p. 1). In his theory on diffusion of innovations, Rogers (2003) outlined the important influence opinion leaders possess and suggested opinion leaders are capable of influencing others’ beliefs and opinions and, thus, their actions. Similarly, Nisbet and Kotcher (2009) indicated opinion leaders are those who “help draw the attention of others to a particular issue, product, or behavior ... [and] perhaps most importantly, signal how others should in turn respond or act” (p. 332). Who opinion leaders are and how they influence others is important, particularly given that their opinions and actions are guided by their ethics.

Understanding the ethics ANR leaders apply to formulate their opinions, beliefs, and attitudes that subsequently determine appropriate action for themselves, and the industry is crucial. It is also imperative to develop a holistic understanding of the ethical culture of the ANR industry. Therefore, the purpose of this study was to characterize the ethical perspectives of ANR leaders in Florida.

### **Conceptual Framework and Review of Literature**

A review of literature and theory pertaining to individuals’ ethical and moral development, as well as the characteristics of overarching ethical leadership styles, provided the framework for this investigation.

#### ***Kohlberg’s Stages of Moral Development***

Kohlberg’s (1963) model of children’s moral development stages can be applied to adult morality (Dawson, 2002) to explain how they develop moral meaning through dilemmas (Lapsley, 2006). This model is a key piece of the ethical decision-making discussion because it represents seminal work in understanding individuals’ foundations of ethical leadership. Kohlberg (1963) structured his model on three levels: preconventional morality; conventional morality; and postconventional morality. Preconventional morality involves two stages that, together, explain an

individual's first recognition of right and wrong as they move from acting to avoid negative consequence to acting to produce positive outcomes. The conventional morality level is where an individual is introduced to compassion and social norms. At this level, the individual acts ethically for the pleasure of those they care about then looks beyond the people they care for and acts ethically according to perceived social expectations. Postconventional morality, also referred to as the principled level, is the final level of Kohlberg's moral development model. This level addresses the idea of the greater good and is characterized by individuals developing and applying their own moral code to guide their behavior. Individuals act on a perceived social contract that represents what they believe to be a just and moral society, as well as begin to demonstrate universal principles by applying a common set of ethics to all people while considering and respecting the viewpoints of all involved (Kohlberg, 1963). It has been argued that few people reach the stage of post-conventional morality and instead remain in conventional morality where their moral views are derived from those around them (McLeod, 2013). This highlights the importance of leaders' ethics, from whom others may be taking their moral cues.

### *Ethical Leadership Styles*

Baehrend (2016) and Chikeleze and Baehrend (2017) examined and described six ethical orientations as leadership styles to help leaders better understand their primary and secondary styles. The six ethical orientations included virtue ethics, justice ethics, duty ethics, utilitarian ethics, caring ethics, and egoism ethics (Baehrend 2016; Chikeleze & Baehrend 2017). These orientations provided the primary framework that guided the development of and data interpretation in this study.

*Virtue ethics* is exhibited by demonstrating excellence of character through faithful adherence to a set of principles. A leader with virtue ethics "does what a good person would do" (Baehrend 2016, p. 15). This leader's primary concern is taking action that represents who they are and what they stand for. *Justice ethics*, also known as distributive justice, is a form of consequentialism where morality of an act is determined by the outcomes or consequences. A leader who practices justice ethics makes decisions and takes actions that represent fairness, characterized by distributing benefits and burdens equally. Further, a distributive justice style leader treats all people equally however "equal" is defined. *Duty ethics* is based in deontology, where morality of a decision or action lies in the action itself and not the consequence or outcome. Duty ethics emphasize a leader's responsibility to fulfill his or her moral obligations to others. Thus, leaders with this ethical style focus on doing their duty and fulfilling their responsibility or obligation, which is set a priori and is absolute.

*Utilitarianism* is a form of consequentialism. A leader whose primary ethical style is utilitarianism will work to create maximum benefit as aggregated across the population. This leader strives for actions that benefit the most people, such that the collective benefit or pleasure outweighs the collective consequence or pain. Utilitarian leaders seek the most happiness for people overall and the greatest good for the greatest number. *Caring* as an ethical leadership style is similar to altruism and is exhibited through passionate concern for the benefit of others. A caring ethical leader is sensitive and responsive to the needs of others and intentionally builds and maintains caring relationships. This leader's primary concern is taking actions that treat his or her close relationships in a caring and sensitive way. Finally, *egoism ethics* leads individuals to do what is in their own self-interest. A leader practicing egoism ethics will strive to do what benefits him or her most and assumes others will do the same. Leaders acting with ethical egoism do not presume to know what is best for others and think it better to let each person pursue what is best for themselves (Baehrend, 2017; Chikeleze & Baehrend, 2017).

Ethics has long been a concern in leadership, particularly in light of corporate or political scandals surrounding societal issues (Chikeleze & Baehrend, 2017). Moreover, ethical leadership in agriculture and natural resources is imperative to protect and sustain the industry (Murphy & Townsend, 1994). To better understand how ANR leaders make decisions about complex issues impacting ANR, it is important to understand how their ethics drive their leadership style when making difficult leadership decisions. Therefore, the current study sought to describe Florida ANR opinion leaders' ethical orientations. The primary question that guided this study was: how do ANR leaders determine what is right/wrong or good/bad when making decisions that impact the ANR industry?

### Methodology

Q methodology (Q) was employed to explore ANR leaders' perceptions of their ethical leadership identities. Q involves a unique data collection technique, called a Q-sort, which utilizes both quantitative and qualitative approaches that provide the means of analyzing individual perceptions and generating new theoretical typologies (Watts & Stenner, 2013). This method is appropriate for small sample sizes (McKeown & Thomas, 2013) as the emphasis is placed on capturing subjective perspectives of participants in a moment-in-time, rather than on generalizing outcomes (Brown, 1980; Watts & Stenner, 2013). Further, participants' observational perspectives are their own, and the interpretation of researchers is secondary to participants' views that emerge through the Q-sort process. As such, reliability and validity are relatively not major concerns in comparison to conventional research methodologies (Brown, 1980; McKeown & Thomas, 2013; Watts & Stenner, 2013). In Q, value is instead placed on *replication*. For example, a Q researcher would place emphasis on understanding if comparable factors would emerge under a similar condition of instruction, rather than attempting to yield consistent internal factor structures. Emphasis is thus placed on capturing subjective perspectives of participants in a moment-in-time, rather than on generalizing outcomes (Brown, 1980; Watts & Stenner, 2013). The Q process involves (a) developing a concourse, (b) creating a Q-set, (c) recruiting participants to collect data through a Q-sort, and (d) using factor analysis and naturalistic analytic procedures to interpret emergent findings.

### Concourse development

The *concourse* is the full range of perspectives presented in the form of a collection of statements (Brown, 1993; Paige & Morin, 2016). The concourse can be generated using relevant theories, literature, qualitative data, or a combination of the three (Brown, 1993; Paige and Morin, 2016; Watts & Stenner, 2005). In this study, we collected qualitative data to develop the concourse. Leaders of ANR organizations in Florida were identified through their organization websites, contacted via email, and asked to participate in virtual interviews. They were also asked to recommend other leaders in their field who may participate. This snowball sampling approach resulted in 14 interviews with Florida ANR industry leaders. Interview participants were provided three scenarios highlighting contentious ANR issues and prompted to describe their opinions of the issue, the factors that drive their opinion on the issue, how they would form a decision if they were to vote on such an issue, and how they would advise others on the issue. The interviews were transcribed and analyzed using thematic analysis (Merriam & Tisdell, 2016). This strategy resulted in 102 initial statements to represent the concourse of this investigation (Watts & Stenner, 2013).

### Q set and data collection

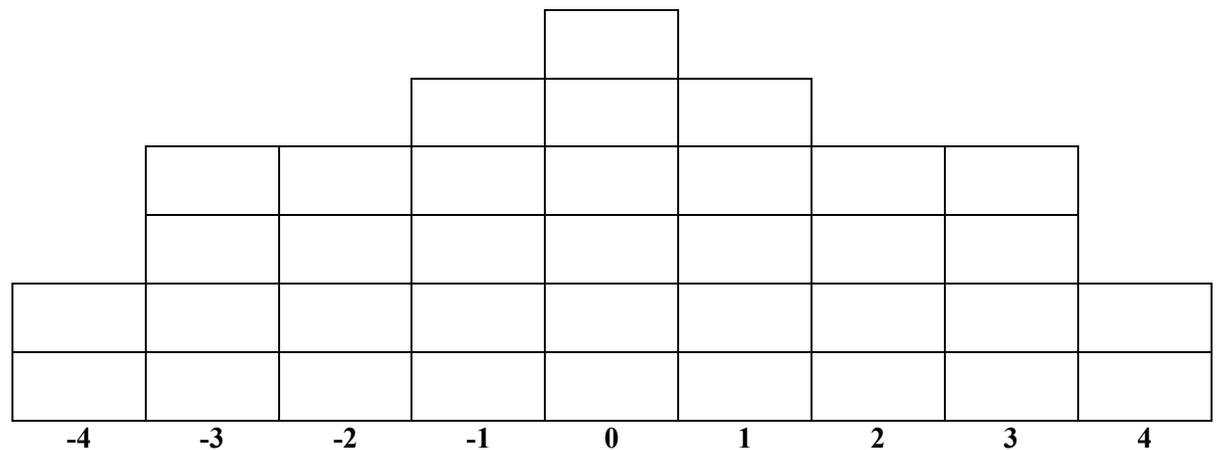
A subset of statements was drawn from the concourse to create the *Q-set*. Statements included in the Q-set are sampled to represent the population, i.e., the concourse (Paige and Morin, 2016; Watts and Stenner, 2005). Six theoretical categories of ethical leadership styles guided the

concourse sampling: (a) duty ethics; (b) utilitarian ethics; (c) virtue ethics; (d) caring ethics; (e) justice ethics; and (f) egoism ethics (Chikeleze & Baehrend, 2017). Homogeneity within each conceptual category and heterogeneity between categories were pursued when negotiating statements for inclusion. This process resulted in 36 statements to represent a full range of views.

ANR leaders were then contacted to participate in the Q-sort activity. Fifteen Q-sort participants, or P-set in Q, were mailed a package containing the 36 statement cards, a sort board, a record sheet to record their sort results, and a demographic information sheet. Once participants received their materials, we scheduled a zoom meeting with each participant to virtually facilitate the sort activity. Each participant was asked to first sort the statements into three categories: (1) most like me, (2) most unlike me, and (3) neutral (McKeown & Thomas, 2013). Participants then self-sorted the statements on a forced distribution board (see Figure 1) in ranking order of personal preference from -4 (most unlike me) to +4 (most like me) using the condition of instruction: *As a leader in ANR, how do you determine what is good or bad/right or wrong?* The condition of instruction is not intended to be the stem of a response scale, but rather provides participants instruction on how to approach the sort. Following the sort, participants were asked a series of questions intended to illuminate their thought process and provide explanation for their sort choices. At the conclusion of the interview, participants were directed to record their sort on to the record sheet, complete the demographic information sheet, and mail the package back to the researchers.

**Figure 1**

*Forced Distribution Used to Collect Data During the Q-sort.*



### Data analysis

Participants' Q-sorts were uploaded to PQ Method® version 2.35 (Schmolck, 2014), and three statistical tests were performed: correlation, factor analysis, and computation of factor scores (McKeown & Thomas, 2013). Unlike traditional factor analysis that correlates items in an instrument, Q correlates individual sorters to examine which participants were homogenous in their beliefs (Brown, 1980). Principle component factor analysis (PCA) was then used to extract factors. Eigenvalues and explained variance were examined for eight unrotated primary factors, which were ranked in order of importance based on the magnitude of eigenvalues. Eigenvalues greater than 1.0 were considered significant, and those less than 1.0 were excluded from further analysis (Brown, 1980). A systematic comparison was then conducted with two, three, and four factor solutions. A

four-factor solution was chosen that captured 14 participants and 68% of the total variance. The factors were rotated using Varimax rotation, and factor arrays were produced. Outputs for factor loadings, factor scores, and distinguishing and consensus statements unique to each factor were then generated (Mauldin, 2012).

To identify defining sorts, the factor matrix was analyzed by establishing a base significance of .50. Defining sorts are those that load high, i.e., significantly, and pure on only one factor. The sorts of 14 out of 15 participants were considered defining. Sorts that did not load high and pure on only one factor were considered to be confounded and, therefore, were not used for further analysis in this study. Participant demographics and factor loads are presented in Table 1.

**Table 1**

*Factor Matrix with Demographics of Participants*

P Number/ Gender	Age	Occupation	Factor Loadings			
			1	2	3	4
1-male	63	Association Executive Director	.69 <sup>a</sup>	.34	-.08	.17
2-male	62	Association Executive Director	.02	.41	.21	-.68 <sup>d</sup>
3-female	34	Marketing	.18	-.09	.76 <sup>c</sup>	-.11
4-female	39	Crop Insurance Administrator	.82 <sup>a</sup>	.05	.38	.02
5-female	34	Communications/Marketing Director	-.05	.18	.50 <sup>c</sup>	.40
6-female	51	Government Administrator	.36	.06	.19	.73 <sup>d</sup>
7-female	57	Ag Marketing	.18	.25	.73 <sup>c</sup>	.22
8-male	64	Nursery	.67 <sup>a</sup>	.21	.15	.34
10-female	62	Public Affairs Director	.37	.43	.35	.51
11-female	32	Policy Director	.14	.89 <sup>b</sup>	-.03	-.03
12-female	56	Association Executive	.13	.65 <sup>b</sup>	.41	-.04
13-male	50	Community Engagement	.77 <sup>a</sup>	.15	.15	.12
14-female	36	Safety and Compliance	.67 <sup>a</sup>	.38	.22	-.11
15-female	38	Director/Sales	.58 <sup>a</sup>	.03	.20	.45
16-male	62	Landscape/Nursery	.37	.16	.59 <sup>c</sup>	.08
Number of Defining Sorts			6	2	4	2
% Variance Explained			23%	14%	16%	12%

*Note.* P Number refers to the numeric identifier for each participant.

<sup>a</sup> Indicates a defining sort for Factor 1. <sup>b</sup> Indicates a defining sort for Factor 2. <sup>c</sup> Indicates a defining sort for Factor 3. <sup>d</sup> Indicates a defining sort for Factor 4

Follow-up interviews conducted with Q-sort participants facilitated understanding of the data and ensured participants' views were represented accurately in the factor profiles, or typologies, developed. Additional efforts to interpret the data and produce unique profiles for each factor included examining z-scores, developing color-coded array boards to examine consensus and distinguishing statements within each array and compare statements across arrays, considering participants' demographic characteristics and prior experience, and interpreting participants' post-sort interviews (Mauldin, 2012).

## Results

Analysis of the data yielded four unique typologies: (1) *Principled Leader*; (2) *Industry-Focused Leader*; (3) *Dutiful Leader*; and (4) *Multi-Hat Leader*.

### Principled Leaders

Six participants, three males and three females, loaded significantly as *Principled Leaders*. Participants in this typology adhered to a set of principles to make decisions that represented who they are and what they stand for. Principled Leaders were guided by honesty and integrity (2, +4), their strong moral code (1, +4), and doing what is right (3, +3). In addition, these leaders emphasized reflecting those virtues in their actions to lead by example (4, +3). In the post-sort interview, one Principled Leader explained, “I think a true leader builds, and the building block has got to be honesty and integrity demonstrated in actions and leading by example, because you want those characteristics to permeate throughout the organization.” Another leader noted, “it’s not about what puts oneself or ourselves first. We are there to serve. It’s sort of servant leadership.” Principled Leaders also pursued being informed and making science-based decisions over doing what protects farmers’ bottom line (32, -4) or what most benefits them personally (34, -4). When elaborating on this in the post-sort interview, one Principled Leader explained “it’s not always about the bottom line is, but is about trying to do what’s right.” Another participant noted, “agriculture is a piece of who I am, but it is far from being my guiding post. My responsibility to the larger takes priority over anything to the smaller.” Table 2 provides the statements central to the Principled Leader perspective.

**Table 2**

*Array Positions for Principled Leader Statements*

No.	Statement	Array Position	Ethical Style
2	Honesty and integrity guide me.	+4	Virtue Ethics
1	The strong moral code I follow guides me.	+4	Virtue Ethics
3	Doing the right thing guides me.	+3	Virtue Ethics
4	Demonstrating in my actions/leading by example guides me.	+3	Virtue Ethics
13	The responsibility to be good stewards of the land, water, and air guides me.	+3	Duty Ethics
16	The responsibility to act based on science, even when it doesn’t support my initial position, guides me.	+3	Duty Ethics
31	Protecting my livelihood guides me.	-3	Egoism Ethics
6	Faith guides me.	-3	Virtue Ethics
36	Protecting agricultures’ public image guides me.	-3	Egoism Ethics
30	Be responsive to the needs of all “sides” guides me.	-3	Caring Ethics
32 <sup>a</sup>	Protecting farmers’ bottom line guides me.	-4	Egoism Ethics
34	Doing what benefits me the most guides me.	-4	Egoism Ethics

*Note.* The No. column provides the reference number for each statement in the q-set.

<sup>a</sup> Indicates distinguishing statements for the Principled Leader typology.

### Industry-Focused Leaders

The two participants who loaded significantly as *Industry-Focused Leaders* were female, employed as policy and public affairs directors, and indicated being very involved in ANR policy. These leaders exhibited a powerful sense of responsibility and connection to the ANR industry and

its members. They were driven by doing what helps the agriculture industry continue to grow (33, +4), by their responsibility to protect farmers and ranchers in the state (14, +4), and by their responsibility to be good stewards (13, +3) and leave things better for future generations (22, +3). In post-sort interviews, both leaders expressed strong personal and professional ties to agriculture. One participant elaborated on her sense of responsibility to the industry and stated, “I came into the industry with a goal in mind that I wanted to be the voice of the farmer in the field who does not have the time to be an advocate for him or herself.” The other participant echoed this tie to the industry and noted “I chose those [most like me statements] because I feel I have a real passion for the job. It’s what motivates me to get up every morning.” When determining what is good/bad or right/wrong, Industry-Focused Leaders were also guided by a desire to stop the spread of misinformation about their industry, and to protect their and farmers’ livelihoods. These leaders were driven least by doing what benefits them most (34, -4). In the post-sort interview, one Industry-Focused Leader explained that, while she does consider what will or will not benefit her, “those are not reasons why you make important decisions for natural resources; a leader doesn’t make decisions that benefit him or her.” Table 3 provides the statements central to the Industry-Focused Leader perspective.

**Table 3***Array Positions for Industry-Focused Leader Statements*

No.	Statement	Array Position	Ethical Style
33 <sup>a</sup>	Doing what helps the agriculture industry continue to grow guides me.	+4	Egoism Ethics
14 <sup>a</sup>	My responsibility to protect farmers and ranchers in this state guides me.	+4	Duty Ethics
1	The strong moral code I follow guides me.	+3	Virtue Ethics
13	The responsibility to be good stewards of the land, water, and air guides me.	+3	Duty Ethics
22	Leaving things better for future generations guides me.	+3	Utilitarian Ethics
2	Honesty and integrity guide me.	+3	Virtue Ethics
31 <sup>a</sup>	Protecting my livelihood guides me.	+2	Egoism Ethics
23 <sup>a</sup>	Doing what benefits the greater good guides me.	-3	Utilitarian Ethics
5 <sup>a</sup>	Doing what I think a good leader would do guides me.	-3	Virtue Ethics
8	Pursuing what is fair for everyone guides me.	-3	Justice Ethics
27	Playing my role in caring for my community guides me.	-3	Caring Ethics
18 <sup>a</sup>	Fulfilling my duty as a leader guides me.	-4	Duty Ethics
34	Doing what benefits me the most guides me.	-4	Egoism Ethics

*Note.* The No. column provides the reference number for each statement in the q-set.

<sup>a</sup> Indicates distinguishing statements for the Industry-Focused Leader typology.

**Dutiful Leaders**

Four participants, three females and one male, loaded significantly as *Dutiful Leaders*. Dutiful Leaders exhibited an intense sense of responsibility to their duty on behalf of science and the industry, regardless of whether all other parties do their parts. These leaders were guided by their responsibility to do the right thing (3, +4), which they perceived to be making informed decisions (17, +3) and considering the consequences both inside and outside their industry (24, +3). In post-sort interviews, leaders in this typology stressed the importance of following scientific

evidence to make informed decisions on behalf of the industry. One participant discussed her experience working with professionals in the hard sciences and stated, “it helps me to appreciate and understand the importance is not necessarily about right or wrong, or one side versus the other, but it’s letting science lead the decision-making process.” Dutiful Leaders were relatively less driven by ensuring all parties share in the cost of protecting our resources (12, -4), and ensuring equal distribution of burdens among all parties (7, -4). Many Dutiful Leaders elaborated on the notion of ensuring equal efforts among all involved by explaining this task as one outside their responsibilities and the roles they can execute. For example, one participant stated, “a lot of people say doing the right thing is fairness, but I don’t necessarily agree with that. Making sure everyone does their part is not my role. I’m not in a position to make sure everyone does their part.” Another participant identified distributive justice efforts as those she could agree with, but noted, “while everyone deserves to be heard, I put [those type of statements] more toward the least like me side because there are some irrational thinkers on either side of any issue.” Table 4 provides statements central to the Dutiful Leader perspective.

**Table 4***Array Positions for Dutiful Leader Statements*

No.	Statement	Array Position	Ethical Style
2	Honesty and integrity guide me.	+4	Virtue Ethics
3	Doing the right thing guides me.	+4	Virtue Ethics
24 <sup>a</sup>	Considering consequences both inside and outside my industry guides me.	+3	Utilitarian Ethics
17	My responsibility to be informed when making decisions guides me.	+3	Duty Ethics
13	The responsibility to be good stewards of the land, water, and air guides me.	+3	Duty Ethics
22	Leaving things better for future generations guides me.	+3	Utilitarian Ethics
27 <sup>a</sup>	Playing my role in caring for my community guides me.	+2	Caring Ethics
9 <sup>a</sup>	Giving balance so everyone can do their part guides me.	-3	Justice Ethics
15 <sup>a</sup>	The responsibility of ANR to do our part guides me.	-3	Duty Ethics
8	Pursuing what is fair for everyone guides me.	-3	Justice Ethics
10 <sup>a</sup>	Making sure all parties do their parts to protect our natural resources guides me.	-3	Justice Ethics
12	Ensuring all parties share in the cost of protecting our resources guides me.	-4	Justice Ethics
7	Ensuring equal distribution of burdens among all guides me.	-4	Justice Ethics

*Note.* The No. column provides the reference number for each statement in the q-set.

<sup>a</sup> Indicates distinguishing statements for the Dutiful Leader typology.

**Multi-Hat Leaders**

Two participants, one male and one female, loaded significantly as *Multi-Hat Leaders*. These participants were an association executive director and a government administrator, and both indicated being extremely involved in ANR policy. Multi-Hat Leaders were primarily guided by their faith and pursuit of the “greater good.” Specifically, participants in this perspective sought to form relationships so everyone can pull together (28, +4), balance what is best for both people and the environment (11, +3), and be responsive to the needs of all sides (30, +2). Both leaders in this

typology had difficulty sorting statements during the sort activity and carefully weighed each statement. In the post-sort interviews, both leaders also reflected heavily on their decisions being made from the perspective of being leaders in ANR as well as members of their communities. For example, one participant noted, “I think being part of the ANR community kind of gives you a different insight into it, so I definitely had that lens over it. But the ones that are on the most like me side are going to be true regardless of the topic we're talking about.” Further, in discussing the intersect of roles in ANR and in the larger community, this participant maintained, “at the end of the day, if you want to feel good about your decisions... about leadership... about representing any group of people or being part of a group of people, it's about doing what's right and then knowing that you're going to be a reliable and strong character and have good decision-making skills that you're going to apply across the board.” Similarly, the other participant in this typology discussed having a responsibility to people in agriculture, stating, “it is my responsibility to protect them; it's my responsibility to help the agricultural industry to continue to grow. And in a very selfish way, I mean, it's how I earn a living.” However, despite having placed a statement pertaining to building relationships on the most unlike me side of the board, this participant also noted, “in a lot of what I do in regard to public image, I am always very open and honest; I try to get a lot of people involved. [Forming relationships] is one of the main things I do...Everyone can pull together.” Table 5 provides the statements central to this perspective.

**Table 5***Array Positions for Multi-Hat Leader Statements*

No.	Statement	Array Position	Ethical Style
6	Faith guides me.	+4	Virtue Ethics
28 <sup>a</sup>	Forming relationships so everyone can pull together guides me.	+4	Caring Ethics
3	Doing the right thing guides me.	+3	Virtue Ethics
23	Doing what benefits the greater good guides me.	+3	Utilitarian Ethics
11	Balancing what is best for both people and the environment guides me.	+3	Justice Ethics
21	Making decisions that offer maximum benefit to all involved guides me.	+3	Utilitarian Ethics
30 <sup>a</sup>	Be responsive to the needs of all “sides” guides me.	+2	Caring Ethics
12	Ensuring all parties share in the cost of protecting our resources guides me.	-3	Justice Ethics
34	Doing what benefits me the most guides me.	-3	Egoism Ethics
33	Doing what helps the agriculture industry continue to grow guides me.	-3	Egoism Ethics
35 <sup>a</sup>	Stopping the spread of misinformation about my industry guides me.	-3	Egoism Ethics
25	Respecting that everyone has their own battles guides me.	-4	Caring Ethics
31 <sup>a</sup>	Protecting my livelihood guides me.	-4	Egoism Ethics

*Note.* The No. column provides the reference number for each statement in the q-set.

<sup>a</sup> Indicates distinguishing statements for the Multi-Hat Leader typology.

### Discussion

This study sought to describe Florida ANR opinion leaders' ethical orientations by illuminating how ANR leaders determine what is right/wrong or good/bad when making decisions

that impact the ANR industry. Some scholars have suggested that many people do not advance beyond conventional morality in their progression of moral development (Kohlberg, 1963), meaning their views on right and wrong are shaped by policies and people around them. Opinion leaders have considerable influence on attitudes, beliefs, and behaviors of their followers (Rogers, 2003), including providing moral cues for deciding what actions are right or wrong, good or bad. As ANR leaders grapple with complex issues and make decisions that impact the industry, it is important to understand ethical orientations that underpin their leadership actions.

Four ethical leadership typologies were identified: the Principled Leader, the Industry-Focused Leader, the Dutiful Leader, and the Multi-Hat Leader. Kohlberg's conventional stage of moral development was represented in the four typologies. In post-sort interviews, participants indicated acting ethically for those they care about and in accordance with perceived social norms. Industry-Focused Leaders stated their decision-making was driven by their responsibility to the industry. Similarly, Multi-Hat Leaders acknowledged their responsibilities to the agriculture community in addition to other communities they are part of and spoke about leading in a way that was ethical across the groups they served. Some statements suggested postconventional moral development. While no participants mentioned striving to make decisions based on an ideal, socially just society, there was some indication of striving to apply a common set of ethics while considering all viewpoints involved. A defining statement for Dutiful Leaders, for example, was "considering consequences both inside and outside my industry guides me."

Participants in each typology exhibited unique ethical perspectives in deciding good/bad or right/wrong as an ANR leader. Moreover, each of the ethical leadership typologies exhibited reliance on a combination of ethical leadership styles. It is often acknowledged that the most effective leaders utilize a combination of styles and strategies relevant to the context, situation, and followers they are leading. Likewise, ethical perspectives often overlap, and rarely do people align with a single ethical theory. As indicated by Kohlberg's (1963) model of moral development and the very definition of ethics (Merriam-Webster, n.d.), individuals develop their own moral code based on their experiences and personal beliefs. Additionally, individuals' morals are influenced by the context within which they exist. Though all our participants were identified as leaders in Florida ANR, each had unique experiences and perceived themselves to be members of slightly different communities within that broader context. This resulted in four typologies that contained some overlap but had distinctly defining characteristics as well.

Principled Leaders strongly adhered to a set of personal virtues to make decisions that represented who they are and what they stand for, and they sought to reflect those virtues in their actions to lead by example. While Principled Leaders strive to be a good person and avoid making decisions based on their own self-interest, it is unclear if this results in actions and outcomes that benefit the industry.

Industry-Focused Leaders demonstrated a keen sense of responsibility and connection to the ANR industry and its members, and they sought to protect the industry through their leadership roles. These leaders exhibited a more deontological approach, viewing the ethical decision as the one that meant they were fulfilling their responsibility to the industry which often included themselves and their own livelihoods. While it could be argued that ANR needs leaders who will protect it at all costs, these leaders may ignore consequences or issues beyond the industry, even if they might be connected in some way.

Dutiful Leaders exhibited a strong sense of responsibility to their duty on behalf of science and the industry, regardless of whether all other parties do their part and contribute their equal share in the cost of protecting our resources. Dutiful Leaders saw their responsibility more broadly than

Industry-Focused Leaders, incorporating their duty to seek out and uphold science-based decisions. Similar to Industry-Focused Leaders, Dutiful Leaders took a relatively deontological stance, grounding their ethical decision-making in their responsibilities, not necessarily the outcomes of the decisions. Perhaps that is because long-term outcomes with regard to agriculture and natural resources can be quite speculative and difficult to “know” and assess. This could result in leading ANR to actions that may disadvantage the industry if other industries and groups involved fail to uphold their share of the burdens.

Lastly, Multi-Hat Leaders were primarily guided by their consideration of the collective good, and they sought to lead as both members of the ANR industry and their local communities. Multi-hat Leaders exhibited the most altruistic tendencies and voiced a desire to balance the needs of multiple constituencies. While admirable, it was clear even in these participants’ Q-sort that decision-making was more difficult, took longer, and required more justification and explanation than other typologies.

Shaw (1997) and Holly (2006) advocated for the inclusion of virtues in land ethics. All four typologies were guided in part by virtues, sorting statements representing virtue ethics into the “most like me” columns. This suggests virtues are important to their ethical decision-making in ANR. Most participants indicated that *doing the right thing* guided their decisions, or they relied on virtues of *honesty and integrity* to guide their decisions-making, however, the interpretation and prioritization of virtues is unclear and may not be similar across the different typologies. Furthermore, previous research indicated a disconnect between perceptions of success as a leader and demonstrating ethical virtues such as honesty, integrity and moral character (Murphy & Townsend, 1994). It is important to consider the potential ramifications of grounding ethical leadership in virtues with regard to real impacts on the Agricultural and Natural Resources industry.

Scholars have suggested that humans have a responsibility to consider the broader environment they exist in when making ethical decisions, including non-human elements of varying value, and that unequal economic values puts limitations on utilitarian and deontological approaches (Callicott, 1987; Holly, 2006; Leopold, 1949/2014). Interestingly, only the Industry-Focused Leader typology included a duty ethics statement as “most like me” and no typologies included a utilitarian ethics statement in their “most like me” column. This suggests that all four typologies recognize the limitations of these ethical approaches and instead rely on approaches that acknowledge the environment and non-human elements that are critical to the ANR industry.

Finally, there was little indication across all four typologies of ensuring that ANR is working collaboratively with those outside the industry to make ethical decisions. The exception may be Multi-Hat Leaders, who were fulfilling multiple leadership roles they felt they could not separate. While Dutiful Leaders acknowledged value in having “everyone at the table,” they simultaneously expressed it was not their responsibility to ensure that was achieved. This begs the question, whose responsibility is it to ensure all relevant voices are being sought and included in decision-making for critical, complex issues? If those at the table abdicate responsibility for recognizing and inviting those not present, who should take responsibility? Further, how can we solve complex problems if critical perspectives are missing?

Several recommendations arose from this study. First, although our participants were geographically dispersed, included a broad age range, represented a variety of agricultural commodities and interests, and assumed varied roles and responsibilities both personally and professionally, there was limited racial and ethnic diversity in our sample. Certainly, this is a limitation of our study and limits our understanding of ethical perspectives among ANR leaders. Future studies should expand the sampling procedure beyond those leaders in agricultural

organizations, to obtain a more diverse and potentially more representative sample of ANR leaders. Work in cross cultural communication (Hofstede, 1980) and cultural values (House et al., 2004) has informed the ways that leadership scholars can understand leadership from the perspective of people from different countries and cultural backgrounds. As such, it is known that leadership ideals, practices, and perceptions can differ between persons from North America and other parts of the world. A more diverse cultural population could generate findings of interest and benefit to leadership scholars and the wider ANR community due to the presence of diverse cultures already a part of the sector's workforce (e.g., migrant workers) and the intersection between U.S. agriculture's enterprise and policy leaders and the agricultural enterprise and policy leaders of other nations in the 21<sup>st</sup> Century's highly globalized marketplace. Additional research should further investigate the nuanced differences between the personas. For example, when one indicates they are guided by their moral code or would do what a good person would do, what is that moral code and what do they believe a good person would do? Similarly, though our participants were identified by their position or peers as leaders in ANR and presumably agreed with that assessment as indicated by their participation in our research, research should investigate who they perceive themselves to be a leader of and who is encompassed in their conceptualization of the ANR industry.

In practice, ANR leaders should reflect on their ethics, how they determine right and wrong, and the implications that has for interactions with others, particularly when high-stakes decisions are being made. Likewise, followers should carefully consider the ethical underpinnings represented by current and potential leaders' opinions and actions so that they can support leaders who best represent their own personal values.

As participants in this study noted the value of having to reflect on their ethics in decision-making as ANR leaders, Extension or other agricultural education and leadership programming designed for this and similar audiences should include activities that encourage such reflection. Agricultural educators at the secondary and post-secondary levels may also consider incorporating determination of and reflection on personal values and ethical decision-making, especially in the context of complex and often contentious issues. Furthermore, learners should practice critically analyzing and identifying the ethical underpinnings of leaders' opinions and actions in order to identify leaders who best represent their own personal values. Moreover, guiding learners toward the postconventional stage of moral development in which they determine their own moral code rather than relying solely on the moral views acquired from the people and environment around them may be a worthy endeavor in preparing ANR leaders. Finally, as noted by Murphy and Townsend (1994), perceiving oneself to be an ethical leader does not necessarily ensure ethical actions are carried out. We reiterate the recommendation to include ethics as an essential knowledge base in agricultural education with an emphasis on ethical leadership, such that ANR leaders are prepared to and do carry out ethical decision making as we continue to navigate complex issues.

## References

- Baehrend, W. R. (2016). *Refinement of the ethical leadership style questionnaire* [Unpublished doctoral dissertation]. Benedictine University.
- Bell, D., Swaffield, J., & Peeters, W. (2019). Climate ethics with an ethnographic sensibility. *Journal of Agricultural Environmental Ethics*, 32(4), 611–632. <https://doi.org/10.1007/s10806-019-09794-z>
- Berry, G. R. (2007). Adding ethical consideration to the decision-making process: A leadership challenge. *Journal of Leadership Studies*, 1(1), 45–50. <https://doi.org/10.1002/jls.20007>

- Brown, S. R. (1980). *Political subjectivity: Applications of Q methodology in political science*. Yale University Press.
- Brown, S. R. (1993). A primer on Q methodology. *Operant Subjectivity*, 16(3/4), 91–138. <https://doi.org/10.15133/j.os.1993.002>
- Callicott, J. B. (1987). Conceptual resources for environmental ethics in Asian traditions of thought: A propaedeutic. *Philosophy East and West*, 37(2), 115–130. <http://doi.org/10.2307/1398732>
- Chikeleze, M. C., & Baehrend, Jr., W. R. (2017). Ethical leadership style and its impact on decision-making. *Journal of Leadership Studies*, 11(2), 45–47. <https://doi.org/10.1002/jls.21523>
- Cletzer, D. A., Mott, R. L., Simonsen, J. C., Tummons, J. D., Peckman, J. Y., & Preston, K. (2022). Agricultural leadership: A national portrait of undergraduate course. *Journal of Agricultural Education*, 63(1), 165-181. <https://doi.org/10.5032/jae.2022.01165>
- Dawson, T. L. (2002). New tools, new insights: Kohlberg's moral judgement stages revisited. *International Journal of Behavioral Development*, 26(2), 154–166. <https://doi.org/10.1080/01650250042000645>
- Eastwood, C., Klerkx, L., Ayre, M., & Dela Rue, B. (2017). Managing socio-ethical challenges in the development of smart farming: From a fragmented to a comprehensive approach for responsible research and innovation. *Journal of Agricultural Environmental Ethics*, 32(5-6), 741–768. <https://doi.org/10.1007/s10806-017-9704-5>
- Fernyhough, C., Watson, A., Bernini, M., Moseley, P., & Alderson-Day, B. (2019). Imaginary companions, inner speech, and auditory verbal hallucinations: What are the relations? *Frontiers in Psychology*, 10, 1–10. <https://doi.org/10.3389/fpsyg.2019.01665>
- Gremmen, B., Blok, V., & Bovenkerk, B. (2019). Responsible innovation for life: Five challenges agriculture offers for responsible innovation in agriculture and food, and the necessity of an ethics innovation. *Journal of Agricultural and Environmental Ethics*, 32, 673–679. <http://doi.org/10.1007/s10806-019-09808-w>
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Sage Publishing.
- Holly, M. (2006). Environmental virtue ethics: A review of some current work. *Journal of Agricultural and Environmental Ethics*, 19(4), 391–424. <http://doi.org/10.1007/s10806006-9002-0>
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (Eds.) (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Sage Publishing.
- Kohlberg, L. (1963). The development of children's orientations toward a moral order: I. Sequence in the development of moral thought. *Vita Humana*, 6(1-2), 11–33. <https://doi.org/10.1159/000269667>

- Lapsley, D. K. (2006). Moral stage theory. *Handbook of moral development*, 37–66. Psychology Press.
- Leopold, A. (2014). The land ethic: A sand county almanac, and sketches here and there. *The ecological design and planning reader* (pp. 108-121). Island Press. (Original work published in 1949).
- Mauldin, C. (2012). *Overview of the Q interpretation process*. Media Marketing Inc.
- McKeown, B., & Thomas, D. (2013). *Q methodology* (2nd ed.). Sage Publishing.
- McLeod, (2013). Kohlberg's stages of moral development. *Simply Psychology*.  
<https://www.simplypsychology.org/kohlberg.html>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). John Wiley & Sons, Inc.
- Merriam-Webster. (n.d.). Ethic. In *Merriam-Webster.com dictionary*. from <https://www.merriam-webster.com/dictionary/ethics>
- Murphy, P. K., & Townsend, C. D. (1994). Leadership and Ethics: A relationship important to agricultural education. *Journal of Agricultural Education*, 35(2), 44-49.  
<https://doi.org/10.5032/jae.1994.02044>
- Nisbet, M. C., & Kotcher, J. E. (2009). A two-step flow of influence on climate change. *Journal of Science Communication*, 30(2), 328–354. <https://doi.org/10.1177/1075547008328797>
- Northouse, P. G. (2013). *Leadership: Theory and practice* (6th ed.). Sage Publishing.
- Paige, J. B., & Morin, K. H. (2016). Q-sample construction: A critical step for a q-methodological study. *Western Journal of Nursing Research*, 38(1), 96–110.  
<https://doi.org/10.1177/0193945914545177>
- Pouteau, S. (2000). Beyond substantial equivalence: Ethical equivalence. *Journal of Agricultural and Environmental Ethics*, 13(4), 273–291. <https://doi.org/10.1023/a:1009546031890>.
- Rogers, E. M. (2003). *The diffusion of innovations* (5th ed.). Free Press.
- Rogers, E. M., & Cartano, D. G. (1962). Methods of measuring opinion leadership. *The Public Opinion Quarterly*, 26(3), 435–441. <https://doi.org/10.1086/267118>
- Schmolck, P. (2014). *PQMethod manual*. Author. <http://schmolck.org/qmethod/downpqwin.htm>
- Shaw, B. (1997). A virtue ethics approach to Aldo Leopold's land ethic. *Environmental Ethics*, 19(1), 53–67. <http://doi.org/10.5840/enviroethics199719139>
- Shinn, G. C., Briers, G., & Baker, M. (2008). Forecasting doctoral-level content in agricultural education: Viewpoints of engaged scholars in the United States. *Journal of Agricultural Education*, 49(1), 121-131. <https://doi.org/10.5032/jae.2008.01121>

- Tague, G. F. (2019). Carlo Alvaro: Ethical veganism, virtue ethics, and the great soul. *Journal of Agricultural and Environmental Ethics*, 32(3), 487–492. <https://doi.org/10.1007/s10806019-09787-y>
- Turner, B. L., Wuellner, M., Nichols, T., & Gates, R. (2014). Dueling land ethics: Uncovering agricultural stakeholder mental models to better understand recent land use conversion. *Journal of Agricultural and Environmental Ethics*, 27(5), 831–856. <http://doi.org/10.1007/s10806-014-9494-y>
- Watts, S., & Stenner, P. (2005). Doing Q methodology: Theory, method and interpretation. *Qualitative Research in Psychology*, 2(1), 67–91. <https://doi.org/10.1191/1478088705qp022oa>
- Watts, S., & Stenner, P. (2013). *Doing Q methodological research: Theory, method, and interpretations* (2nd ed.). Sage Publishing.
- Zwart, H. (2000). A short history of food ethics. *Journal of Agricultural and Environmental Ethics*, 12(2), 113–126. <https://doi.org/10.1023/a:1009530412679>